

priority. It is true that this could result in sterile environments that were the antithesis of the enriched environments for which good zoos strive today, and that some zoos hung on to this design and husbandry philosophy longer than they needed to. What Hancocks fails to acknowledge is that zoos were able to move on from this era for many species, responding to pressure from behaviourists for enriched environments, and pressure from architects for naturalistic exhibits, only because of the pharmaceutical revolution. Before the availability of anthelmintics and other drug therapies, great apes, for example, could not be maintained on earth substrates. Easily cleaned floors were the only way to avoid the lethal build-up of parasites and pathogens.

*A Different Nature* should be read by anyone with an interest in zoos and their development. The author is probably wrong as frequently as he is right but that does not devalue the importance of the issues discussed. He is sometimes lucid and inspirational, sometimes illogical and irrational. The book is perhaps as much about the paradoxical world of David Hancocks and his attitude to zoos, as about the zoos themselves.

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***Why Animal Experimentation Matters: The Use of Animals in Medical Research***

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The way in which the debate on animal ethics is portrayed by the media gives the impression that anyone who takes the well-being of animals seriously must advocate the complete abolition of the use of animals in medical research. As an animal welfare scientist who has recently ventured into the world of biomedical research, I have been looking for a serious and coherent argumentation from the animal experimenter's point of view, and I was enthusiastic to find this book. The central theme of the introduction and of the following eight essays is the grounds on which humans can allow themselves the right to do harm to animals for the benefit of humankind. Biomedical researchers, social scientists and philosophers present their views on different aspects of this ethical issue.

The introduction and the first three essays emphasise the most common argument used by scientists in defence of their activities: that of the human benefit of experimentation. Social scientist Ellen Frankel Paul introduces the theme with an overview of the contribution of animal experimentation to medical knowledge and of the philosophy and actions of the animal-rights movement. Kenneth F Kiple and Kriemhild Coneè Ornelas (historian and sociologist/anthropologist, respectively) devote their essay to the history of the use of animals in science from Aristotle's time to the modern day, pointing out the importance of animal experiments for advancing human knowledge. Veterinarian and neuroscientist Adrian R Morrison gives a personal account on resolving the moral dilemma. In addition to referring to superior human cognitive capacities, Morrison points to the fact that humans' use of animals is just one of many examples in nature of how organisms use other organisms, and suggests that humans ought to make use of the extraordinary curiosity we as a species possess: "To refrain from exploring nature in every way possible would be an arrogant rejection of evolutionary forces". Morrison also presents a critical analysis of how the

benefits of medical research involving animals have been portrayed by opponents to animal experimentation. He discredits the claim sometimes heard in the debate — that animal experimentation is of little or no use, or even harmful, for the advance of science — and gives examples of how fragments of scientific work have been put together in order to support an anti-experimentation view far from the responsible scientists' own statements. Morrison also touches upon another issue, which is further developed in neuroscientist Stuart Zola's essay: the extent to which it is possible to make an *a priori* judgement of the value of a planned research project. This is of course a very important issue, because ethical committees all over the world are constantly trying to balance the possible beneficial outcome of an experiment against the predicted suffering of the animals involved. With examples from his own research, Zola discusses how difficult it may be to distinguish between applied and basic research and to decide in advance which is the research leading to important clinical advances and which is of less importance.

Making a complete cost-benefit analysis of the use of animals in medical research is, of course, mission impossible, given the enormous amount of research that would have to be covered. Taken together, these essays give a good overview of the value of animal experimentation, but unsurprisingly they are all strongly biased. I understand that the authors have chosen to argue fully in favour of research, as they act in response to very strong prior argumentation against. Nevertheless, I think that a recognition of doubts about certain types of animal use would have strengthened their argument.

The following five issues are mainly purely ethical discussions of the use of animals in research. The essay by Jerrold Tannenbaum should be of special interest to readers of *Animal Welfare*, because he sets out to question what he calls a "paradigm shift" in the view of animal welfare. The traditional view on animal welfare, according to Tannenbaum, is that inflicting pain (in the wide sense, including "pain, suffering, stress, distress and discomfort") on animals is undesirable and should always be avoided when possible, but that in certain cases causing pain may be "justifiable". In contrast to this traditional view, Tannenbaum argues that there is now increasing support among laboratory-animal professionals for the view that obligations towards animals go beyond avoiding pain to including providing pleasure and satisfaction. It is not always clear to me where the line is drawn between what the ethologist would define as 'satisfaction of highly motivated behaviours' and what Tannenbaum calls "the most varied and exquisite pleasures", but his essay is thought-provoking and might spur some discussion within the area of animal welfare research.

Ethicist Baruch A Brody brings up the difference between the European and American views on animals in medical research as reflected in the different legislations. Central to the American view is that lexical priority is given to humans — in other words, that human benefits can always justify the use of animals. In contrast, the European view recognises that there are cases where the costs for the animals are so high that the research cannot be justified. Brody shows how the European view can form the basis for what he calls "a reasonable pro-research position on animal research". In essence, the proposed position consists of recognising that: 1) animals have an interest in not suffering which may be harmed by research performed on them; 2) this harm of interests is morally relevant; 3) the justification for harming animal interests is the human benefit of animal-based research; and 4) when deciding whether or not an experiment should be allowed, human interests should be given greater weight than animal interests. This position can be placed in a larger ethical perspective as part of the idea that we can have special obligations to some individuals rather than being obliged to consider everybody's interests equally. Justification for (at least some) animal experimentation then follows from the recognition that humans have other and more

extensive obligations to fellow humans than to animals. However, this argument leads to a burning question, which Brody leaves unanswered as a subject in need of further ethical reflection: in which cases would such discrimination be justified and in which is it unfair? Or, in other words, is speciesism justifiable while sexism and racism are not?

Charles S Nicoll and Sharon M Russell provide the Darwinian biologists' answer to that question in their essay. Placing humankind in a biological context, they claim that neither racism nor sexism exists among animals, whereas speciesism is a natural biological phenomenon. After giving examples of how different species take advantage of other species in nature, the authors conclude that humankind's adaptive advantage is our superior cognitive capacity, and that our survival is dependent upon us making use of this advantage. Thus, any limitation of the human drive to acquire new knowledge would threaten our success in the evolutionary battle.

The essay I found most difficult to digest, both in terms of style and in terms of the conclusions it arrives at, is the one by ethicist H Tristram Engelhardt, Jr. He outlines his view in a rather complicated text but, in essence, his position is as follows: in the absence of an absolute morality defined by a divine entity, ethics must rely on the consent of moral agents, and as humans are the only individuals known to be able to act morally, this means that all ethics must be based upon human consent. However, people have different views and will never agree; thus, we will have to allow room for different moral views on the use of animals. As a consequence, what counts and has to be balanced in each case is the pain and pleasure experienced by people with different views on animals. Based on an underlying (but not explicitly stated) assumption that the human experience is always superior to the animals', Tristram Engelhardt then concludes that it is not only morally acceptable but even a moral obligation to use animals in any way that can provide pleasure to humans.

The last essay by philosopher R G Frey is a refreshingly critical review of the argument of human benefit, the central argument used by most previous writers. Frey explicitly subscribes to the view that the human benefit of animal experimentation is so great that the consequences of abolition would be unacceptable to society. However, he points out that the argument of human benefit needs to be complemented by an argument as to why animals and not humans should be the subject of experimentation. If the maximum benefit is what counts, we would use human subjects because they would be better models of human conditions than animals. It should be noted that Frey strongly underlines that he is not in favour of putting this into practice; rather, he is using it as an illustration of the importance of defining the criteria that exclude any experiments on humans whilst deeming that animal experimentation remains acceptable. In an extensive argumentation, he demonstrates how difficult, or even impossible, it is to define such criteria.

All in all, the book is written in a clear and accessible style (with the exception of Tristram Engelhardt's essay, which I believe is rather heavy-going if one is not used to reading philosophical texts). Still, the reading, especially of the essays written by philosophers, requires a certain effort as the text is dense with ethical argumentation that the reader has to digest. However, I see this as a quality of the book that proves that the authors have taken seriously their mission to provide coherent argumentation. The standpoints presented are, unsurprisingly, far from those generally presented in this journal but, given that they represent views shared by a large number of researchers, they deserve consideration. Although I agree more with some authors than with others (and even wholeheartedly disagree with one or two), all the essays are interesting and thought-provoking and well worth reading.

Many of the essays contain very severe criticisms against the animal-rights movement, describing its activities as “evil” and calling the activists “adaptively unfit” from a Darwinian perspective. For the naïve reader this seems unnecessarily harsh, although it is less surprising if one is familiar with how animal-rights activism, and in particular its violent branches, is perceived within the medical research community. One would hope that the authors distinguish between violent activism and a more moderate animal welfare movement, but this is unfortunately not always very clear. I think this reflects a widespread opinion among researchers that concern for animal welfare will undermine biomedical research. Would increased dialogue between animal welfare scientists and medical researchers help to change this perception? I hope so, and I recommend this book as important reading for anyone interested in participating in this dialogue.

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### ***Practical Wildlife Care***

L Stocker (2000). Published by Blackwell Science Ltd, Osney Mead, Oxford OX2 0EL, UK. Distributed by Marston Book Services Ltd, P O Box 269, Abingdon, Oxon OX14 4YN, UK. 296 pp. Paperback (ISBN 0 632 05245 7). Price £19.99.

This book is an excellent and very practical manual of wildlife care. Aimed at the veterinary nurse, animal care student or rehabilitator, there is much in here to interest the veterinarian as well. There is an emphasis throughout on the need for teamwork between veterinarian and nurse or rehabilitator. The style is not too dry and scientific to put off the untrained enthusiast, but is sufficiently detailed to provide the professional with the information needed.

The book starts with a review of the requirements for the nursing and welfare of wildlife under rehabilitation and includes a very useful section on health and safety for personnel and a review of zoonotic diseases. The first part of the book takes the reader through first aid and emergency procedures, followed by nursing techniques including fluid therapy and wound and fracture management. There is nothing here that will be a surprise to the qualified veterinary nurse, although it is handy to have the principles of nursing applied directly to wildlife. In particular, the application of nursing principles to the avian patient often does not come easily to those experienced only with companion mammals. The similarities and differences are clearly explained. Plentiful good, clear photographs and drawings illustrate the text.

There follow chapters on generic avian and mammalian disease, followed by chapters broken down by species or group. Swans, hedgehogs and foxes merit a chapter to themselves, and others are dealt with in generic groups (eg seabirds, birds of prey). The rearing of orphan mammals and of birds is covered in separate chapters.

If this book has a weakness, it is that it represents the methods and views of one author and his organisation (with a few named inclusions). It is in no way a review of current views and techniques across the field of rehabilitation. For example, his assertion that “euthanasia is constantly being abused and animals are killed because somebody does not want to put in the time and effort necessary” would not be considered by many to fully address the welfare issues involved. In the chapter on seabirds, a well-known publication on post-release survival with conclusions contrary to the author’s viewpoint is not mentioned. Also, there is no